

## COSMETIC PEELING METHOD USING UREA

The present invention relates to a peeling process that uses a composition containing at least 20% by weight of urea in a physiologically acceptable  
5 medium.

Peelings are a well-known means for improving the surface appearance of the skin, in particular to attenuate pigmentation defects such as actinic lentigo or acne or chickenpox scars, or to smooth out the  
10 irregularities of the texture of the skin, in particular wrinkles and fine lines.

They have the effect of removing a part of the skin to be treated (epidermis and possibly the upper layer of the dermis) via chemical methods  
15 (especially glycolic acid or salicylic acid).

Although the compositions used hitherto to perform chemical peelings have given satisfactory results, it nevertheless remains that they are not without side effects. Thus, peelings with salicylic  
20 acid may give rise to cases of salicylism in the event of an overdose or of prolonged application.

There is thus still a need for peeling compositions that are effective while at the same time being well tolerated.

25 The Applicant has now found that compositions comprising at least 20% by weight of urea are useful for this purpose.

Urea is a humectant and moisturizer that is conventionally used in small amount (less than 5% by weight) in cosmetic compositions. At higher concentration (greater than 10% by weight), urea has  
5 keratolytic properties resulting from its capacity to degrade corneodesmosine, which constitutes the cellular junctions between the epidermal keratinocytes, and also bacteriostatic properties.

Keratolytic compositions containing from 21%  
10 to 40% by weight of urea have thus been described as useful in application to the skin, in the treatment of dry skin (US-5 919 470). However, these compositions are applied in the form of a semi-solid cream that is intended to remain on the skin, and as such they give  
15 rise to stinging and an odour - resulting from the decomposition of the urea - that the user finds hard to tolerate. The user is thus liable to lengthen the application interval of these creams, or even to stop applying them, which is harmful to their long-term  
20 efficacy. In addition, the creams disclosed in the said document are difficult to remove by rinsing with water, and as such they would not be suitable for use as peeling compositions.

This is likewise the case for the gels,  
25 preferably containing from 10% to 20% by weight of urea, disclosed in document EP-1 293 204.

US-6 429 231 also discloses compositions containing from 0.1% to 40% by weight of urea, which may be applied in various galenical forms, in particular in the form of creams, gels, sticks or  
5 cleansing compositions, for treating various conditions such as acne, psoriasis, seborrhoea, rosacea and hyperpigmentations. As mentioned previously, the prolonged use of urea at high concentration in cream form is not desirable. The compositions illustrated in  
10 the said patent thus comprise an amount of urea in the region of 10% by weight. In addition, the time of contact with the skin of the cleansing compositions containing high concentrations of urea is too short to allow them to act. Thus, the said document does not  
15 disclose a sufficiently effective and well-tolerated method for attenuating the abovementioned skin conditions.

There was therefore nothing in the prior art to suggest that urea could be used at high  
20 concentration to perform chemical peelings for cosmetic purposes.

One subject of the invention is thus a cosmetic process for treating visible and/or tactile irregularities on human skin, comprising the steps  
25 consisting in:

- (a) applying topically to the skin a composition comprising, in a physiologically acceptable medium, at least 20% by weight of urea,
- (b) leaving the composition in contact with the skin
- 5 for a time of between 5 minutes and 6 hours and preferably between 5 minutes and 30 minutes, and
- (c) removing the composition by rinsing.

The composition used in the present invention contains an amount of urea that depends on the depth of peeling that is to be performed, i.e. the layers of the epidermis or dermis that are to be removed, and for example an amount ranging from 20% to 50% by weight of urea, for example an amount of 20%, 30%, 40% or 50% by weight of urea relative to the total weight of the

15 composition.

The composition according to the invention may be in any galenical form conventionally used for topical application, provided that it can be removed easily by rinsing, and especially in the form of an aqueous gel or an aqueous or aqueous-alcoholic solution. It may also, by adding a fatty or oily phase, be in the form of a dispersion of the lotion or emulsion type of liquid or semi-liquid consistency, preferably obtained by dispersing a fatty phase in an aqueous phase (O/W). These compositions are prepared

25 according to the usual methods.

It may be applied by any means that allow uniform distribution, and especially using a pad of cottonwool, a rod, a brush, a gauze, a spatula or a swab, or alternatively by spraying, and may be removed  
5 by rinsing with water or with a mild detergent.

According to one preferred embodiment of the invention, the composition contains a continuous aqueous phase.

When the composition is in emulsion form, the  
10 proportion of the oily phase of the emulsion may range, for example, from 1% to 30% by weight and preferably from 5% to 20% by weight relative to the total weight of the composition. The oils, emulsifiers and co-emulsifiers used in the composition in emulsion form  
15 are chosen from those conventionally used in cosmetics or dermatology. The emulsifier and the co-emulsifier are generally present in the composition in a proportion ranging from 0.3% to 30% by weight and preferably from 0.5% to 20% by weight relative to the  
20 total weight of the composition. The emulsion may also contain lipid vesicles.

As fatty substances that may be used in the invention, it is possible to use oils and especially mineral oils (liquid petroleum jelly), oils of plant  
25 origin (avocado oil or soybean oil), synthetic oils (perhydrosqualene), silicone oils (cyclomethicone) and fluoro oils (perfluoropolyethers).

As emulsifiers and co-emulsifiers that may be used in the invention, examples that may be mentioned include fatty acid esters of polyethylene glycol, such as PEG-100 stearate, PEG-50 stearate and PEG-40 stearate; fatty acid esters of polyols, such as glyceryl stearate, sorbitan tristearate and oxyethylenated sorbitan stearates, which are available under the trade names Tween® 20 or Tween® 60, for example; and mixtures thereof.

10           The composition according to the invention may also contain adjuvants that are common in cosmetics and dermatology, such as thickeners, active agents, preserving agents, solvents and fillers. The amounts of these various adjuvants are those conventionally used  
15 in the fields under consideration, for example from 0.01% to 20% of the total weight of the composition. Depending on their nature, these adjuvants may be introduced into the fatty phase or into the aqueous phase. These adjuvants and concentrations thereof  
20 should be such that they do not harm the keratolytic properties of urea.

Thickeners that may be mentioned in particular include: xanthan gum, an optionally crosslinked acrylic acid homopolymer or copolymer, a  
25 polyacrylamide, an acrylamidomethylpropanesulphonic acid homopolymer or copolymer, and cellulose derivatives, including hydroxypropyl cellulose.

According to one preferred embodiment of the invention, the composition also contains at least one compound chosen from alcohols and polyols containing from 1 to 3 carbon atoms. Examples of such compounds  
5 that may be mentioned include ethanol, isopropanol, glycerol and propylene glycol.

As mentioned previously, this composition is intended to be used in a peeling process for attenuating the visible and/or tactile irregularities  
10 on the skin, and in particular for attenuating wrinkles and fine lines and/or pigmentation marks and/or scars - in particular acne scars - and/or for unblocking skin pores. The composition may thus be applied to the face and/or the neck and/or the neckline and/or the hands  
15 and/or the back.

To optimize its effects, the peeling process according to the invention preferably comprises additional steps of preparing the skin for peeling and/or of skincare after peeling using compositions  
20 containing smaller amounts of urea than the peeling composition described above.

Thus, it is preferable for the process according to the invention to comprise, besides the steps mentioned above:  
25 - a preliminary step of applying to the skin a composition containing, in a physiologically acceptable

medium, from 0.5% to 10% by weight of urea, before performing step (a), and/or

- an additional step of applying to the skin a composition containing, in a physiologically acceptable

5 medium, from 0.5 to 10% by weight of urea, after performing step (c).

Performing the preliminary step above also makes it possible to detect any allergy to urea and to improve the efficacy and uniformity of the peeling.

10 The compositions used in these preliminary and additional steps may be applied in the morning and evening, for example, optionally in combination with a composition for protecting the skin against the effects of UV rays. The pretreatment composition may be applied  
15 for one to four weeks and the post-treatment composition may be applied for one day to eight weeks, for example.

The process according to the invention, including the optional preliminary and additional  
20 steps, may be performed only once or repeated up to five times, if necessary, the peeling sessions preferably being at intervals of from one to eight weeks.

The invention will now be illustrated with  
25 the non-limiting examples that follow. In these examples, the amounts are indicated as weight percentages.

**EXAMPLES****Example 1: Peeling composition**

Urea	25	%
Xanthan gum	1	%
Preserving agent	qs	
Ethanol	10	%
Purified water	qs	100 %

This composition is prepared in a manner that  
5 is conventional for those skilled in the art. It is  
intended to be applied to the face to smooth out  
wrinkles and fine lines, according to the following  
process.

The skin is first cleansed and degreased, for  
10 example using a gauze impregnated with ethanol or  
acetone, so as to remove the sebum and the dead cells  
and to harmonize the skin pH. The sensitive areas of  
the skin (corners of the lips, the nostrils and the  
corners of the eyes) are then protected with an  
15 occlusive ointment and the eyes themselves are  
protected with eye protection. The above composition is  
then applied to the skin, using a brush, as a thin  
coat. After leaving the composition on for a few  
minutes, it is removed by rinsing using a compress  
20 soaked with warm water.

10

**Example 2: Peeling composition**

Urea	40 %
Glycerol	10 %
Propylene glycol	10 %
Preserving agent	qs
Purified water	qs 100 %

This composition is prepared in a manner that is conventional for those skilled in the art. It is intended to be applied to the hands to attenuate age marks, according to the process described in Example 1.

**Example 3: Peeling composition**

Urea	50 %
Preserving agent	qs
Purified water	qs 100 %

This composition is prepared in a manner that is conventional for those skilled in the art. It is intended to be applied to the back to treat comedones, according to the process described in Example 1.

**Example 4: Peeling composition**

Urea	30 %
3- (N-Morpholino)propanesulphonic acid	10 %
Preserving agent	qs
Sodium hydroxide	qs pH 7

CONFIRMATION COPY

Purified water        qs                    100 %

This composition is prepared in a manner that is conventional for those skilled in the art. It is intended to be applied to the neckline to attenuate pigmentation marks, according to the process described

5 in Example 1.

**Example 5: Peeling-preparation composition**

Urea    10 %

Preserving agent                            qs

Carbomer                                    2 %

Sodium hydroxide                        qs        pH 7

Purified water                            qs        100 %

This composition is prepared in a manner that is conventional for those skilled in the art. It is intended to be applied morning and evening to precleansed skin, for one to four weeks, to prepare the skin for application of the peeling compositions illustrated in Examples 1 to 4.

10